

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A method of controlling a blood pump implanted in a patient, comprising:

operating the pump at a predetermined speed;

monitoring the patient's ~~diastolic pump~~ flow rate;

extracting the patient's diastolic flow rate from the flow rate, wherein the diastolic pump flow rate is ~~an~~ a separately isolated flow contribution below a mean flow rate; and

changing the predetermined speed in response to the diastolic ~~pump~~ flow rate.
2. (Currently Amended) The method of claim 1, further comprising:

monitoring the patient's heart rate; and

changing the predetermined speed in response to at least one of the diastolic pump flow rate or the heart rate.
3. (Currently Amended) The method of claim 1, wherein changing the predetermined speed includes increasing the pump speed in response to an increase in the diastolic pump flow rate.

4. (Previously Presented) The method of claim 2, wherein changing the predetermined speed includes increasing the pump speed in response to an increase in the heart rate.

5. (Currently Amended) The method of claim 1, wherein changing the predetermined speed includes decreasing the pump speed in response to a decrease in the diastolic ~~pump~~ flow rate.

6. (Currently Amended) The method of claim 2, wherein changing the predetermined speed includes increasing the pump speed in response to an increase in the diastolic ~~pump~~ flow rate.

7. (Currently Amended) A pump system, comprising:

a pump; and

a controller having an input for receiving a blood flow rate signal, the controller being programmed to extract a separate diastolic ~~pump~~ flow rate from the blood flow rate signal and provide a control signal to the pump to vary the speed of the pump in response to the separate diastolic ~~pump~~ flow rate, wherein the separate diastolic ~~pump~~ flow rate is a flow contribution below a mean flow rate.

8. (Previously Presented) The pump system of claim 7, further comprising an implantable flow measurement device having an output for providing the flow rate signal.

9. (Previously Presented) The pump system of claim 7, wherein the controller is further programmed to vary the speed of the pump in response to heart rate changes.

10. (Currently Amended) The pump system of claim 7, wherein the controller is programmed to increase the speed of the pump in response to an increase in the separate diastolic ~~pump~~ flow rate.

11. (Currently Amended) The pump system of claim 7, wherein the controller is programmed to decrease the speed of the pump in response to a decrease in the separate diastolic ~~pump~~ flow rate.

12. (Currently Amended) The pump system of claim 9, wherein the controller is programmed to increase the speed of the pump in response to an increase in at least one of the separate diastolic ~~pump~~ flow rate or the heart rate.

13. (Currently Amended) The pump system of claim 12, wherein the controller is programmed to decrease the speed of the pump in response to a decrease in the separate diastolic ~~pump~~ flow rate.

14. (Previously Presented) The method of claim 1, further comprising:

setting the predetermined speed of the pump in accordance with activities performed by the patient.

15. (Previously Presented) The method of claim 14, wherein the activities are sleeping, normal activity or high energy exertion.

16-18. (Canceled)

19. (Previously Presented) The pump system of claim 7, further comprising an implantable pressure sensor.

20. (Currently Amended) The pump system of claim 19, wherein pressure sensor data from the pressure sensor may be use to derive separate diastolic ~~pump~~ flow rate information.

21-23. (Canceled)

Please add new claims 24-28, as follows:

24. (New) The method of claim 2, wherein changing the predetermined speed includes decreasing the pump speed in response to a decreasing in the heart rate.

25. (New) The method of claim 2, wherein changing the predetermined speed includes decreasing the pump speed in response to a decrease in the diastolic flow rate.

26. (New) A method of controlling a blood pump implanted in a patient, comprising:

monitoring the patient's blood flow rate;

extracting the patient's diastolic flow rate from the flow rate, wherein the diastolic flow rate

is a separately isolated flow contribution below a mean flow rate; and

changing a speed of the pump in response to the extracted diastolic flow rate.

27. (New) The method of claim 26, further including the step of increasing the speed of the pump in response to an increase in the extracted diastolic flow rate.

28. (New) The method of claim 26, further including the step of decreasing the speed of the pump in response to a decrease in the extracted diastolic flow rate.